

USSR

KHENKIN, V. E., Upravlyayemye sistemy, vyp. 10, 1971, pp 48-61

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- 47 -

K
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UDC 616.43 - 089.343

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UDC: 538.222

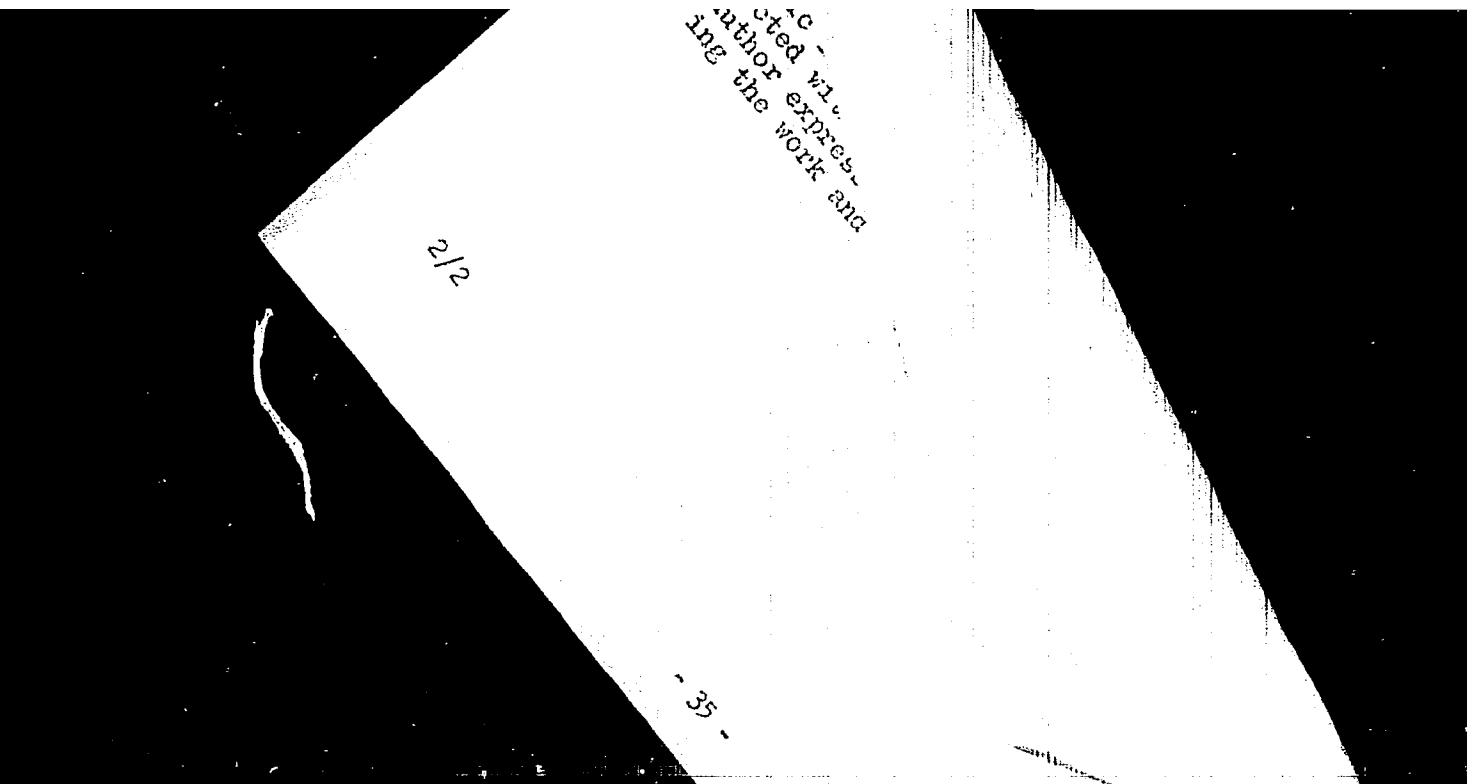
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Exobiology

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"Life in the Universe"

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Translation: The experiments on Soviet artificial Mars satellites are attentively watched by specialists in different sectors of science and engineering. This expedition of machines is also of great interest to representatives of exobiology, a new sector of science which deals with the problems of the origin and existence of life outside Earth.

The notable achievements made during recent years by Soviet science and engineering in mastering cosmic space permit us to pose realistically the question of the possibility of searching for life on other planets. Of course, exobiologists do not expect that the Mars-2 or Mars-3 orbital stations will discover life or, more precisely, its remnants, on the Red Planet. This would require a study of the relatively deep strata of the Martian soil, which is not included in the tasks of the present cosmic experiments. However, every new cosmonautic achievement indicates the approach of the day when the question of whether there is life on neighboring planets will move from the category of suppositions and theoretical and laboratory investigations into the realm of practical research.

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A group of coworkers at the Laboratory of Space Biology made a model of the physical environment which probably existed on Earth before life originated. As the result of these experiments, it was possible to determine that significant biochemical substances which originated abiogenically (that is, in the absence of life, from the simplest gases of the Earth's primary atmosphere) during that period, landed in the world's oceans or on the surface of the planet and survived for future chemical evolution. These processes were actively affected by ultraviolet and ionizing radiation and the gas composition of the atmosphere, as well as by various salts, minerals, and rocks which could accelerate or delay the reactions taking place. The heat of the Earth's depths, particularly in those regions of the planet where there was active volcanic activity, played a large part in the synthesis of significant biochemical

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Glass and Ceramics

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UDC 546.45:161.6:16212

SEMIN, YE. G., and KHENTOV, V. YA., Novocherkassk Polytechnical
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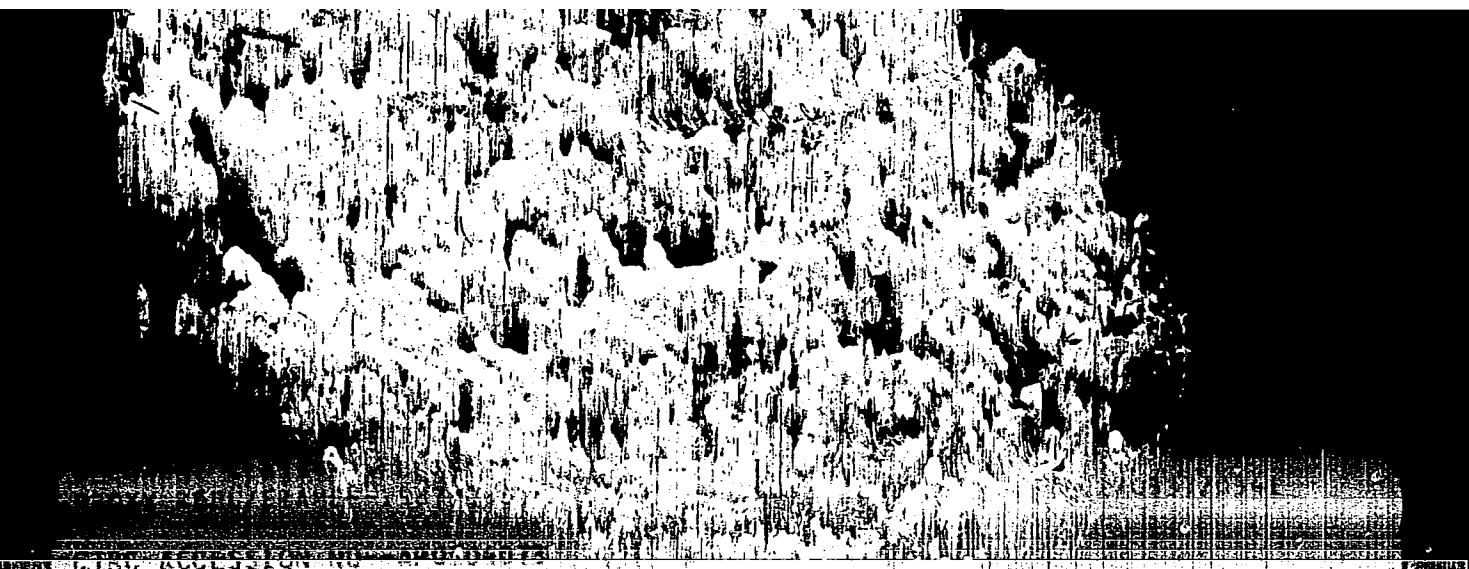
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"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002201310014-7



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Novosibirsk, Upravlyayemye sistemy--sbornik (Controllable Systems--collection of works), vyp. 10, 1971, pp 48-61 (from RZh-Kibernetika, No 5, May 73, abstract No 5V491 by Yu. Voloshin)

Translation: The paper deals with the problem of existence of Hamiltonian cycles in generalized Petersen graphs $G(n,k)$ for the case of mutually simple parameters n, k . The principal results are formulated in terms of the concept of the characteristic $\lambda(G)$ of graph G defined as follows:

$$\lambda(G) = \begin{cases} S, & \text{where } S \text{ is the lowest possible number such} \\ & \text{that there exists in graph } G \text{ a system of } S \text{ simple} \\ & \text{cycles of even length which are disjoint with re-} \\ & \text{spect to vertices and cover all vertices of } G; \\ 0, & \text{if the cycle system described above does not} \\ & \text{exist in } G. \end{cases}$$

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UDC 546.45:161.6:16212

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1/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--DROP ENTRAINMENT DURING MICROBUBBLING -U-
AUTHOR--GLEYM, V.G., SHILDLOVSKIY, B.R., VISHNEVETSKAYA, A.N., KHENTOV,
V.YA.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 337-41
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--WATER, STEAM BOILER, SODIUM CHLORIDE, SODIUM SULFATE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0460 STEP NO--UR/0080/70/043/002/0337/0341
CIRC ACCESSION NO--AP0104073
UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70
 CIRC ACCESSION NO--AP0104073
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF STEAM QUALITY IN HIGH
 PRESSURE BOILERS BY ENTRAPPED WATER DROPLETS WAS INVESTIGATED IN A
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 SEC) OF DROPLETS FORMED WAS DEVELOPED. DROPLET FORMATION IN THE BREAK UP
 OF 0.22 M⁴ BUBBLES ON A POROUS CERAMIC PLATE (A) (BACTERIAL FILTER F5)
 WAS OBSD. ON A PLEXIGLAS PLATE 2 CM FROM A AT AIR VELOCITIES SMALLER
 THAN 0.65 CM-SEC, AND NaCl OR Na SUB2 SO SUB4 SOLNS. CONCNS. HIGHEST M
 VALUES WERE OBSD. AT VELOCITIES OF SIMILAR TO 0.1 CM-SEC AND LOW,
 SMALLER THAN 0.15 M, ELECTROLYTE CONCNS. FOR A 0.001M NaCl SOLN. A VALUE
 OF M EQUALS 680 TIMES 10 PRIME NEGATIVE6 G-CM PRIME2 SEC WAS DETD.; THE
 M VALUES AND HEIGHTS TO WHICH DROPLETS WERE CARRIED WERE LOWEST AT 0.05M
 NaCl AND 0.01M NaSO SUB4. Cl PRIME NEGATIVE, SO SUB4 PRIME2 NEGATIVE
 AND PO SUB4 PRIME3 NEGATIVE WITH HYDRATION ENERGIES OF 79, 249, AND 502
 KCAL-MOL YIELDED M OF (680, 502, AND 430) TIMES 10 PRIME NEGATIVE6,
 RESP.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--EFFECT OF TEMPERATURE ON THE SIZE AND COMPOSITION OF DROP
ENTRAINMENT DURING MICROBUBBLING -U-
AUTHOR--(04)-GLEIM, V.G., SHIDLOVSKIY, B.R., VISHNEVETSKAYA, A.N., KHENTOV,
V.YA.
COUNTRY OF INFO--USSR
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(5), 1177-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROLYSIS, SODIUM SILICATE, PHOSPHATE, SODIUM CHLORIDE,
THERMAL EFFECT, LIQUID DROP MODEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0956 STEP NO--UR/0080/70/043/005/1177/1178
CIRC ACCESSION NO--AP0131541
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--110EC70

2/2 016

CIRC ACCESSION NO--AP0131541

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FORMATION OF 0.4 MM DIAM. BUBBLES IN BOILERS AT 200 PSI AND THEIR ENTRAINMENT WITH SUBSEQUENT CONTAMINATION OF THE STEAM WAS STUDIED BY THE TECHNIQUE OF G. (1970) IN A SO CALLED MICROBUBBLING MODEL AT 20-75DEGREES. THE TYPE AND FRACTION OF IONS CARRIED BY THE BUBBLES FROM SOLNS. CONTG. PO SUB4 PRIME3 NEGATIVE 0.5 G-L., NACL 0.4 M, AND SIO SUB3 PRIME2NEGATIVE 0.5 G-L. (IN VARIOUS COMBINATIONS) WERE DETD. AS A FUNCTION OF TEMP. BUBBLES CONTG. THE LEAST AMT. OF IONS WERE FORMED AT 55DEGREES THE LARGE CONTENT OF SIO SUB3 PRIME2 NEGATIVE IN THE ENTRAINMENT WAS ATTRIBUTED TO THE HYDROLYSIS OF NA SILICATE AND POLYMN. (DISILICATE FORMATION). THE PRESENCE OF SIO SUB3 PRIME2 NEGATIVE IN THE SOLN. INCREASES THE DROP ENTRAINMENT. FACILITY: ROSTOV.-NA-DONU, INST. INZH. ZHELEZNODOROZH. TRANSP., ROSTOV-GA-DCN, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRICAL STRENGTH OF VARIOUS MICROPARTICLES OF POLYPROPYLENE
FILMS -U-
AUTHOR--(02)-KOLESOV, S.N., KHERASKOV, L.N. **K**
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 266-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--PLASTIC FILM, DIELECTRIC STRENGTH, POLYPROPYLENE/(U)PP5
POLYPROPYLENE FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1243 STEP NO--UR/0460/70/012/004/0266/0268
CIRC ACCESSION NO--AP0134917
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HIGHEST BREAKDOWN POTENTIAL (E SUBB) IN POLYPROPYLENE PP-5 (78PERCENT CRYSTALLINITY) WAS OBSD. IN THE CENTRAL REGION OF THE SPHERULITES, WHEREAS MIN. E SUBB WAS MEASURED IN THE INTERSPHERULITE SPACE. THUS, BREAKDOWN OF POLYMER FILMS WAS PRIMARILY DUE TO THE INTERSPHERULITE SPACE WHICH HAD A LESS DENSE STRUCTURE. FACILITY: TASHKENT. ELEKTROTEKH. INST. SVYAZI, TASHKENT, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF GLOBULAR ORGANIZATION ON THE ELECTRICAL STRENGTH OF
POLYSTYRENE -U-
AUTHOR-(03)-KOLESOV, S.N., BALABAN, N.P., KHERASKOV, L.N.
COUNTRY OF INFO--USSR
SOURCE--VYSKOMOL. SOEDIN., SER. B 1970, 12(5), 366-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--POLYSTYRENE RESIN, PLASTIC FILM, ELECTRIC FIELD, ELECTRIC
PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/1332 STEP NO--UR/0460/70/012/005/0366/0368
CIRC ACCESSION NO--AP0138342
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0138342
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYSTYRENE FILMS, FORMED BY THE
EVAPN. OF ITS SOLNS. IN O,XYLENE HAVE MORE REGULAR AND FINER GLOBULAR
STRUCTURE THAN FILMS FROM CCL SUB4 SOLNS. THE FORMER FILMS HAVE 460
KV-MM ELEC. FIELD STRENGTH; THE LATTER, 260 KV-MM. FACILITY:
TASHKENT. ELEKTROTEKH. INST. SVYAZI, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 51

KHERMANIS, E. Kh.

"Concerning the Mechanism of Adaptation in Problems of Monitoring"

Riga, Adaptiv. sistemy--sbornik (Adaptive Systems--collection of works), vyp. 1, "Zinatne", 1972, pp 55-63 (from RZh-Kibernetika, No 5, May 73, abstract No 5V611 by the author)

Translation: The problem of interaction between monitored and unmonitored sides is analyzed in terms of a bimatrix 2x2 game played through many times. The optimum mixed strategies of the sides are calculated and their optimum pure strategies are indicated. A flowchart is proposed for an algorithm which can change the probability of a given action on the part of the monitored side and is thus adaptable to a change in strategies of the monitor.

1/1

- 67 -

USSR

UDC: 8.74

KHERMANIS, E. Kh.

"Modeling Physical Phenomena in Homogeneous and Isotropic Neuron-Like Structures"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 143-152 (from RZh-Kiber-netika, No 1, Jan 72, Abstract No LV1114)

Translation: Some discrete homogeneous and isotropic neuron-like structures are considered. Such structures may be completely given by a function of interaction between any two points, this function in the given case depending only on the distance between the points and on time. By introducing around any excited point a circle of excitation and one or more rings of deceleration, elementary and complex fields of excitation and the connections between these fields may be found. The time dependence of the function of interaction ensures inertia (i. e. motion) of these fields. But motions with different absolute velocities can be attained only in a structure made up of probabilistic signal distributors. Author's abstract.

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USSR

UDC: 671.374.201

ZALITIS, V. A., KHERMANIS, E. Kh., Institute of Electronics and Computer Technology, Academy of Sciences of the Latvian SSR.

"An Analysis of Sawtooth Voltage Generators with Negative Resistance"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 2, 1970, pp 109-115

Abstract: The subject is a sawtooth voltage generator with compensating EMF. Such generators require a nonlagging EMF, which is frequently provided by the use of a high capacity capacitor in place of the power source, although this worsens linearity and eliminates the possibility of close control on the slope of the "teeth."

The circuit considered in this case differs in that the EMF is grounded, the amplifier has a coefficient of amplification greater than 1, and a voltage divider is added so that the ratio of two resistances determines the coefficient of amplification.

The easiest way to analyze such circuits is to consider the amplifier in terms of a negative resistance. The circuit design is quite simple in this case and the mathematical analysis is straight-forward, showing that the necessary condition of linearity is that the negative resistance be equal $1/2$

USSR

ZALITIS, E. A., KHERMANIS, E. K., Izvestiya Akademii Nauk Latviskoy SSR, No 2, 1970, pp 109-115

absolutely to the positive resistance in the circuit. After some discussion of the ideal case, the article considers real approximations to a negative resistance, principally a phase inversion direct current amplifier with positive resistive feedback. Two circuits of this type are shown schematically, one with two transistors of different conductivity, and one with four compound transistors. These circuits are analyzed in some detail. It is shown that variations in the gain of the amplifier are caused by the fact that it depends on the gain of the transistors, and the first transistor in the circuit is working at small current levels, where the gain is small and variable. Using type MP113 and MP116 transistors, the nonlinearity of the negative resistance is below 1%. The second circuit design improves this characteristic by a factor of 10, but it has the drawback of being temperature sensitive.

Both circuits shown are subject to good control over a fairly wide range by varying the voltage during the periods of charge and discharge of the condenser. This makes it possible to form triangular impulses, sawteeth or other trapezoidal wave forms from a simple rectangular input.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RELAXATION PHENOMENA IN VISCOUS LIQUIDS AT 700-1600 MHZ -U-
AUTHOR--(02)-BERDYEV, A.A., KHERMRAYEV, B.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ. TEKH., KHIM. GEOL. NAUK
1970, (1), 97-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ETHYLENE, TRANSFORMER OIL, GLYCEROL, ABSORPTION, ETHYLENE
GLYCOL, ULTRASONIC EFFECT, RELAXATION PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1553 STEP NO--UR/0202/70/000/001/0097/0098
CIRC ACCESSION NO--AP0118536
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119536

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ULTRASONIC ABSORPTION AT 700-1600 MHZ AND ZONEDEGREES WAS STUDIED FOR CASTOR, VACUUM, PARAFFIN, TRANSFORMER AND BLEACHED GILS. GLYCEROL, AND ETHYLENE AND DIETHYLENE GLYCOLS. THE ABSORPTION DEVIATES FROM THE QUADRATIC RELATION. FACILITY: FIZ.-TEKH. INST., ASHKHABAD, USSR.

UNCLASSIFIED

USSR

UDC 616.988.5-08.

KHERSONSKAYA, R. Ya.

Klinika i Lecheniye Adenovirusnykh Zabolevaniy (The Clinical Picture and Treatment of Adenovirus Diseases), Kiev, "Zdorov'ya," 1971, 168 pp

Translation: Annotation: On the basis of literature data and the author's observations, questions pertaining to adenovirus diseases are presented in this book. There is detailed treatment of the pathogenesis, diagnosis, and differential diagnosis of these diseases. Descriptions are given of the clinical picture of adenovirus diseases, which have been studied using modern research methods (fluorescent antibody technique, virological, serological, and others). Complications and treatment are also discussed.

General principles of treatment are reviewed and special attention is devoted to serotherapy and enzyme therapy. Figures on the results of treatment are given.

The monograph is intended for a broad range of practical doctors.

1/3.

USSR

KHERSONSKAYA, R. Ya., Klinika i Lecheniye Adenovirusnykh Zabolevaniy (The Clinical Picture and Treatment of Adenovirus Diseases), Kiev, "Zdorov'ya," 1971, 168 pp

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2/3

USSR

KHERSONSKAYA, R. Ya., Klinika i Lecheniye Adenovirusnykh Zabolevaniy (The Clinical Picture and Treatment of Adenovirus Diseases), Kiev, "Zdorov'ya," 1971, 168 pp

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USSR

UDC 666.113.621'431'47'41'33'32'28

KOSTANYAN, K. A., SARINGYULYAN, R. S., KHERUNTSYAN, V. I., BELOV, N. I.,
OGANEZOVA, R. S., and UL'YANOV, V. V.

"Glass"

USSR Author's Certificate No 366157, Filed 29 Jan 71, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1620354/29-33)

Translation: A glass including SiO_2 , CaO , ZnO , Na_2O , Al_2O_3 , BaO and K_2O , distinguished by the fact that in order to decrease the spectral absorption in the ultraviolet region it contains the above components in the following quantities, weight %: SiO_2 67-76, CaO 1.5-1.2, ZnO 1-4, Na_2O 7-15, Al_2O_3 0.5-5, BaO 0.5-5, K_2O 2-12 and furthermore SnO 0.2-2.0.

1/1

USSR

UDC 8.74

IOFFE, P. D., TOPORISHCHEVA, S. A., KARMAKOV, T. N., ~~KHERUVIMOVA, L. P.~~

"Programming System Based on the LS Language"

Tr. N.-i. i proyekt. in-ta mekhaniz. i avtomatiz. upr. proiz-vom v avtomob. promsti (Works of the Scientific Research and Planning and Design Institute of Mechanization and Automation of Production Control in the Motor Vehicle Industry), 1971, vyp. 2, 139-143 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V596)

Translation: A programming system is described which was created on the basis of the LS algorithmic language. The basic succession of development of the system is discussed. A brief description is presented of the composition and structure of the system, the types of operations performed by it, and the sequence in which the operations are performed during its operating process.

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USSR

UDC 535.373.2

YERMOLAYEV, V. L., KAZANSKAYA, N. A., MOSHINSKAYA, A. V.,
KHERUZE, Yu. I.

"Velocity Constants of Intramolecular Energy Transfer in Complex
Ions of Rare-Earth Metals With Aromatic Acids"

Leningrad, Optika i Spektroskopiya, No. 1, 1972, pp 82-85

Abstract: This article is subtitled "II, Effect of Introducing
Insulating Methylene Groups." In the first part of the article,
published in the same journal named above (vol 28, 1970, p 1150),
the authors determined the velocity constants of the intramolecu-
lar energy transfer from the organic part to the rare-earth ion
for a large number of complexes of Tb^{3+} , Eu^{3+} , Sm^{3+} , and Dy^{3+} , with
the derivatives of benzoic acid, and found that the energy trans-
fer was the result of exchange-resonance interactions. The
present, second part of the paper investigates the effect of the
introduction of one or two methylene groups (CH_2) between the
aromatic group and the carboxyl group on the velocity constant of
energy transfer in complex rare-earth ions with aromatic acids.

1/2

USSR

YERMOLAYEV, V. L. et al, Optika i Spektroskopiya, No 1, 1972,
pp 82-85

A table of the measured velocity constants is given for various types of acids and rare-earth complexes, and it is found that an exchange-resonance mechanism is involved here as well.

2/2

- 109 -

Acc. Nr:

AP0045501

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

UR 0051

84536b Charge transfer bands in complexes of rare-earth ions with aromatic acids. Ermolaev, V. L.; Kazanskaya, N. A.; Petrov, A. A.; Kheruz, Yu. I. (USSR). *Opt. Spektrosk.* 1970, 28(1), 208-10 (Russ.). The electronic absorption and luminescence spectra of the complexes of rare-earth metal ions (Sm^{3+} , Eu^{3+} , Tb^{3+} , Dy^{3+} , and Yb^{3+}) with benzoic, salicylic (I), 2,4-dihydroxybenzoic (II), 2-methoxybenzoic, phthalic, anthranilic (III), dimethylantranilic, and other aromatic acids were measured in MeOH contg. MeONa at 293°K. The uv spectra of the complexes of Eu with I-III and of Sm with II contained addnl. long-wavelength bands which were not present in analogous Tb complexes. The long-wavelength bands were characterized as charge-transfer bands. Also the formation of a new short-wavelength band in the uv spectra of the complexes was obsd.; however, these bands were not interpreted. Upon excitation in the ligand absorption-band region, the complexes of Sm, Eu, Tb, and Dy with aromatic acids gave an intense luminescence due to an intramol. energy transfer from the triplet energy level of the complex to the resonance level of the respective ion. No luminescence was obsd. with complexes of Eu and Sm. C. Parkanyi

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UDC 535.34+535.37

YERMOLAYEV, V. L., KAZANSKAYA, N. A., PETROV, A. A., KHERUZE, Yu. I.

"Charge-Transfer Bands in Complexes of Rare-Earth Ions With Aromatic Acids"

Leningrad, Optika i Spektroskopiya, Vol 28, No 1, Jan 70, pp 208-210

Abstract: The authors studied the electron absorption spectra and luminescence of solutions of complexes of rare-earth ions with aromatic acids (benzoic acid, o-hydroxybenzoic acid, 2,4-dihydroxybenzoic acid, o-methoxybenzoic acid, phthalic acid, anthranilic acid, dimethylantranilic acid) in methanol at 293° K. The absorption spectra of complexes of europium with salicylic, β -resorcylic, and anthranilic acids and samarium with β -resorcylic acid revealed additional long-wave bands which were absent in the same complexes of terbium. The dependence of the position of the new long-wave absorption bands on the reduction potentials of triply charged ions of the rare-earth elements, their width, and intensity indicate that these bands are due to electron charge-transfer transitions from organic ligands to rare-earth ions. The appearance of the charge-transfer bands is accompanied by disappearance of the luminescence of the complexes.

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USSR

YERMOLAYEV, V. L., et al., Optika i Spektroskopiya, Vol 28, No 1, Jan 70,
pp 208-210

The authors thank A. V. Moshinskaya for preparing the rare-earth nitrates
and salicylates.

2/2

USSR

KHESIN, Arkadiy

"Television and the Cell"

Riga, Nauka i Tekhnika, No 1, 1973, pp 38-41

Abstract: Of the many products of electronic technology of value to biomedical research and clinical medicine is the television or scanning microscope. This instrument is a combination of an ordinary light microscope and a television transmitter which transforms images into electrical signals (video signals) by scanning the luminous flux at each point on a preparation. One of its major advantages over the ordinary microscope is that it permits automatic analysis of the geometric and optical parameters of microscopic objects and determination of their statistical and quantitative characteristics. One potentially important practical application of the television analyzer of image structure, now under active study at the Institute of Experimental and Clinical Medicine, Latvian Ministry of Health, is the classification (sorting) of cytological specimens into normal and possibly malignant ones. The procedure is to be used in conjunction with mass examinations for early detection of cancer.

1/1

Television

USSR

UDC: 681.14.523.8

BRAUDE, G. V., BONCH-BRUYEVICH, A. M., GEL'FANDBEYN, Ya. A., GULIN, I. N.,
KRIVOSHEYEV, M. I., MIRSKIY, G. Ya., TISHCHENKO, I. M., TEL'NYKH, O. A.,
KHESIN, A. Ya.

"A Television Device for Determining the Coordinates of Point Objects"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 26, Sep 71, Author's Certificate No 313210, p 165

Translation: This Author's Certificate introduces a television device for determining the coordinates of point objects. The device contains a television transmitting tube with memory, an output scanning unit, a video signal processing unit, an erasure unit, a synchronizing unit, a cadence pulse generator, an optical shutter, and a data input module. As a distinguishing feature of the patent, the accuracy of coordinate determination is improved by tying series-connected horizontal and vertical interrogation counters to the output of the cadence pulse generator. The counter outputs are connected through shaping matrixes for horizontal and vertical deflection to the input of the output scanning unit. At the same time, a second output of the vertical interrogation counter is connected through a decoder to the data input module.

1/1

USSR

UDC 621.374.1

KHESIN, ALEKSEY YAKOVLEVICH

"Pulse Engineering (Popular Radio Library 771)"

Impul'snaya tekhnika (Massovaya radiobiblioteka 771) [cf English above],
Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, ill. 45 k.

Abstract: The principal elements and devices of pulse engineering are considered. Pulse circuits are described which are based on semiconductor, electrovacuum and gas-discharge devices, and magnetic elements. The examples of the use of pulse circuits presented are mainly for television equipment and devices of industrial electronics. The book is intended for radio amateurs familiar with the principles of radio engineering and can be useful to students studying pulse engineering.

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KHESIN, ARKADIY YAKOVLEVICH, Impul'snaya tekhnika (Massovaya radiobiblioteka 771), Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, 111. 45 k.

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USSR

KHESIN, ARKADIY YAKOVLEVICH, Impul'snaya tekhnika (Massovaya radiobiblioteka 771), Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, ill. 45 k.

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KHESIN, ARKADIY YAKOVLEVICH, Impul'snaya tekhnika (Massovaya radiobiblioteka 771), Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, ill. 45 k.

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KHESIN, ARKADIY YAKOVLEVICH, Impul'snaya tekhnika (Massovaya radiobiblioteka 771), Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, 111. 45 k.

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KHESIN, ARKADIY YAKOVLEVICH, Impul'snaya tekhnika (Massovaya radiobiblioteka 771), Moscow, Izd. "Energiya," 1971, 2nd ed., revised and enlarged, 100 pp, ill. 45 k.

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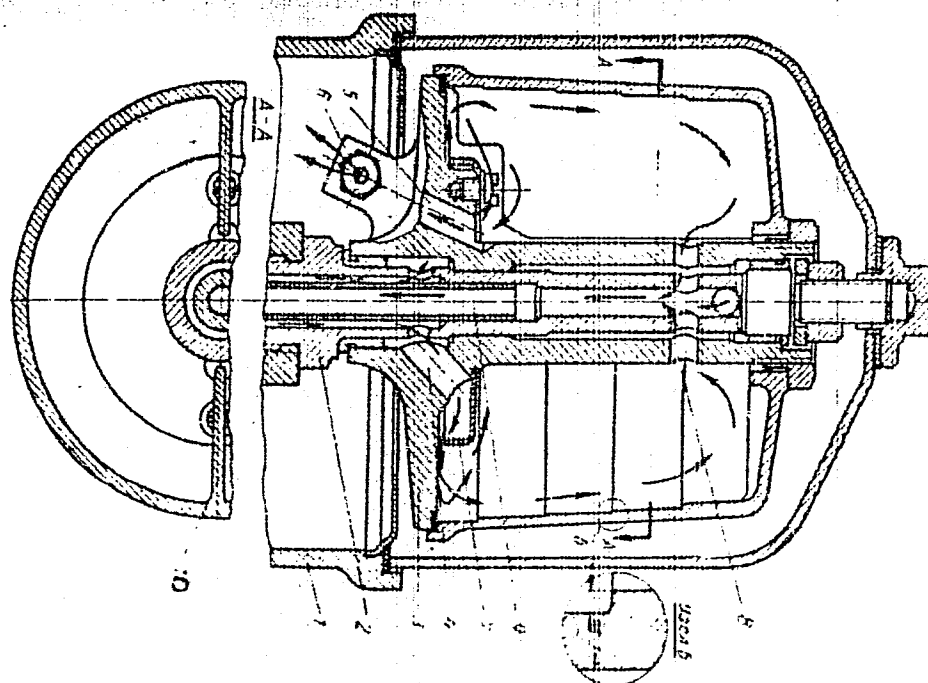
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

244003 OIL PUMP & FILTER SYSTEM for the forced
oil lubrication of an internal combustion engine. The unit consists of case 1, axle 2, of the rotor 3 with oil alleyways 4 & 5. The improvement is in the position of the oil thrower 7 which is bowl shaped and covers the oil feed bores 4, and the reducing diametric baffles 10 at the rate of 1 M.M. per step. A further improvement is in the position of the oil channels 5 to pressure nozzles 6 which are set in the bottom of rotor 3.
21.4.62 as 774506/24-6 A.Ya. KHESIN et al.
(3.10.69) Bul. 17/14.5.69. Class 46c, 82b. Int.
Cl. F 02f, F 04b.

Khesin, A.Ya.; Koval', I.A.; Yeremenko, B.S.

19821483

AA0052694



2/2

19821484

1/1

USSR

UDC 69.058.8:627.8.084.12

KHESIN, G. L., Doctor of Technical Sciences and KOSTIN, I. Kh., DMOKHOVSKIY, A. V. and YURENEVA, Ye. V., Candidates of Technical Sciences

"Study of Stresses from Dynamic Effects in Models of Water Engineering Structures by the Method of Photoelasticity"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 1, Jan. 1973, pp 23-29.

Abstract: Studies performed by the method of dynamic photoelasticity of the stress state of models of certain water engineering structures under the influence of dynamic loads are described. The method of investigation is briefly described. Conditions of similarity are presented for construction of models, methods of creation of dynamic loads in models are analyzed, plus problems of recording of the wave picture and interpretation of experimental data. Results are presented from studies performed by the method of dynamic photoelasticity and a table is presented illustrating the solution of engineering problems by this method.

1/1

USSR

UDC 627.826/.828:624.042.7.001.57

KHESIN, G.L., POPOV, A.I., Candidates of Technical Sciences, DOLBIN, A.I.,
~~SHCHELKANOV, I.V.~~, Engineers

"Investigation of Stresses in Buttress-Type Dams Due to the Action of a Seismic Load by the Photoelasticity Method"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 3, 1972, pp 26-28

Abstract: The article deals with an approximate experimental method for the determination of stresses in hydraulic-engineering structures due to the action of seismic forces directed along the stream or across the stream. The research procedure is based upon the use of a centrifugal field for simulation of the seismic load and using the polarization-optical method for determination of the stresses in the dam models. 3 figures, 1 table, 6 bibliographic entries.

1/1

USSR

STRELCHUK, N. A., KHESIN, G. I., KOSTIN, I. KH., SHPYAKIN, V. N.,
MARSHAK, YU. I.

"Studies of Stresses in Tunnels by the Polarization Optical
Method and Under Natural Conditions Under the Effect of an
Explosive Load"

Sb. tr. Mosk. inzh. stroit. in-t (Collected Works of the Moscow
Construction Engineering Institute), 1970, No 73, pp 53-63 (from
RZh-Mekhanika, No 11, Nov 70, Abstract No 11V834)

Translation: The stressed state of the hydrotechnical tunnels
of the Toktogul GES / Hydroelectric Power Plant 7 and the Alma-
Ata siltproof dam occurring when exploding charges during their
construction was investigated in two-dimensional models. The
scales of geometric similarity were $(2.5-6) \cdot 10^3$. The complex
shape of the day surface led to multiple application of the inci-
dent and reflected waves. The stresses in the outline of the
tunnels were determined by pictures of the interference bands
from the condition of similarity of the wave field in nature and
in the model using known theoretical and empirical relations.

1/2

USSR

STRELCHUK, N. A., et al, Sb. tr. Mosk. inzh. stroit. in-t, 1970, No 73, pp 53-63

The problem was solved under the assumption of elasticity anisotropy of the material in nature (limestone) and the model (ED5-MTGFA). For the characteristic times corresponding to the effect of different waves in the tunnel, stress-strain diagrams of the expected maximum outline stresses are presented. A comparison of the results obtained using the model and natural measurements is presented for the Alma-Ata Dam. The bibliography has 9 entries.

2/2

- 24 -

KHESIN, R.B.

Biology

SO: Dint 559/2

25 Jul 1973

UDC: 575

GORIA

RNA-POLYMERASE AND REGULATION OF RNA SYNTHESIS IN THE CELL

[Article by Doctor of Biological Sciences R. B. KHESIN, Moscow, Vsesoyuznyi Nauchnyi Tsentr, Russian, No 11, November 1971, pp. 22-39]

Processes of DNA, RNA and protein biosynthesis form the basis of cell vital activity; normal and pathologic development of organisms. The patterns of these processes have been elucidated and it is increasingly important to establish the structure and mechanism of catalytic action of enzymes working on nucleic acids (or for both viruses on RNA) and to elucidate the regulation mechanism of intracellular biosynthesis, that is the mechanism which provides development of the organism and adaptation of the cell to the environment.

These processes are linked first and foremost with the on- and off-switching of synthesis of different proteins. For this reason it was essential to learn whether regulation of protein synthesis in living cells of information RNA is effected on genes or whether protein synthesis is regulated during their formation in the ribosomes. In 1962 M. Y. Khomutskiy and the author, having developed a method of separating RNA and DNA hybridization, demonstrated with the example of phage T2 that during the course of its development there takes place sequential on- and off-switching of different genes and the forming of different information RNA sets. A conclusion was drawn, which today is already trivial, that regulation of protein synthesis is based precisely on regulation of the forming of information RNA. Consequently the problem of regulating protein synthesis, at least to some extent, reduces to elucidation of the mechanism regulating the formation of information RNA.

How is research in this area proceeding?

It is known that all RNA and DNA are formed with the enzyme RNA-polymerase. According to the Jacob and Monod classic theory of negative regulation, regulation of the forming of RNA is effected by special proteins -- repressors, interacting with RNA. RNA-polymerase synthesizes RNA on all genes not blocked by repressors. This theory assigns an essentially positive role to the enzyme RNA-polymerase which synthesizes RNA.

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE ROLE OF GENETICS IN MOLECULAR BIOLOGY -U-
AUTHOR--KHESIN, R.B. *K*
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2,
PP. 183-196
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GENETICS, MOLECULAR BIOLOGY, DNA, RNA, PROTEIN, ENZYME,
BACTERIOPHAGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/0947 STEP NO--UR/0216/70/000/002/0183/0196
CIRC ACCESSION NO--AP0109104
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109104

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROLE OF GENETICAL ANALYSIS
RELATIVE TO THE INVESTIGATION OF A SERIES OF MOLECULAR BIOLOGY PROBLEMS
IS DISCUSSED: 1) THE FUNCTIONAL DNA STRUCTURE IS THE INSTANCE OF
MAPPING THE LOCUS OF FIXATION OF RNA POLYMERASE TO THE INITIAL REGION OF
THE OPERON PROMOTOR; 2) STRUCTURE OF THE PROTEIN MOLECULE IN THE
INSTANCE OF RNA POLYMERASE AND THE ISOENZYMES; 3) THE ASSEMBLY PROCESS
OF SUPERMOLECULAR STRUCTURES IN THE INSTANCE OF BACTERIOPHAGE
MORPHOGENESIS. FACILITY: I. V. KURCHATOV INSTITUTE OF ATOMIC
ENERGY.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CYTOPHOTOMETRIC AND RADIOAUTOGRAPHIC STUDY OF RNA SYNTHESIS IN
CULTURES OF LEUKEMIA CELLS SENSITIVE AND RESISTANT TO COXSACKIE B3 VIRUS
AUTHOR--(05)-KHESIN, YA.E., TKHORZHEVSKIY, V.V., YERMAN, B.A., AMCHENKOVA,
A.M., VORONINA, F.V.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1218-21
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LEUKEMIA, COXSACKIE B VIRUS, RNA, BIOSYNTHESIS, TRITIUM,
CHEMICAL LABELLING, AUTORADIOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0705 STEP NO--UR/0020/70/190/005/1218/1221
CIRC ACCESSION NO--AT0121364
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0121364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE SHOWN FOR CHANGES IN RNA CONTENT OF NORMAL AND SPECIFICALLY RESISTANT LEUKEMIA L69 CELLS AFTER INFECTION WITH HOMOLOGOUS VIRUS. THE RESISTANT CELLS DISPLAY A PECULIAR METABOLISM IN THAT THE INTRACELLULAR DEVELOPMENT OF THE VIRUS IS INTERRUPTED AT AN EARLY STAGE WITHOUT REACHING FULL DEPROTEINIZATION WHILE THE SECONDARY GROWTH OF RNA CONTENT IS NOT ACCOMPANIED BY A RISE OF VIRUS RNA SYNTHETIC ACTIVITY IN THE CYTOPLASM OR CYTOPATHIC CHANGES OF THE CELLS. TREATMENT OF THE INFECTED CELLS BY ACTINOMYCIN FOR 1 HR COMPLETELY INHIBITED NUCLEIC ACID SYNTHESIS SO THAT IN SUBSEQUENT TREATMENT WITH URIDINE PRIME3 H SUBSTANTIALLY NO TAG IS INTRODUCED INTO THE NUCLEI OF THE CELLS. THUS THE PRODUCTION OF MESSENGER RNA FOR THE VIRUS INHIBITOR OF SYNTHESIS OF CELLULAR RNA IS CODED NOT BY THE VIRUS GENOME BUT BY THE CELLULAR GENOME.
FACILITY: INST. EPIDEMIOLOG. MIKROBIOLOG. IM. GAMALEI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 576.858.23.083.35:576.8.095.383.098.396

KHESIN, Ya. Ye., AMCHENKOVA, A. M., and KOZ'YAKOV, S. Ya., Laboratory of Cytopathology, Division of Virology, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Content of Basic Proteins in Reticular Cells of Transplantable Lines Sensitive and Resistant to Enteroviruses"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 116-118

Abstract: The content of basic proteins in cultures of M. rhesus reticular cells sensitive and specifically resistant to polio virus (MIO and MIO-45, respectively) was subjected to comparative study by histochemical and cytophotometric methods. It was established that the content of basic proteins in the cytoplasm and to a still greater extent in the nuclei was higher for the resistant MIO-45 than the sensitive MIO cells. It had been shown earlier that immunity of resistant reticular cells to a virus is associated with cellular inhibition of the synthesis of definite substances required for the adsorption and deproteinization of the virus. This change in the metabolism of the cells, which results in what may be called metabolic immunity, is presumably due to the action of basic proteins of the histone type.

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USSR

UDC 616.381-003.2-092.9-022.6:576.858.095.383

KHESIN, Ya. Ye., VORONINA, F. V., and AMCHENKOVA, A. M., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Cytological Study of the Peritoneal Exudate of Mice in the Course of Interferon Production in Vitro"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 544-549

Abstract: Cytological and cytochemical studies were made of cultures obtained from peritoneal exudate of mice which were producing interferon owing to infection with Newcastle disease virus and of control groups. During the production of interferon (1-5 hrs after inoculation with the virus), signs of the activation of RNA synthesis appeared, including increased activity of glucose-6-phosphate dehydrogenase, some oxidative enzymes, and, particularly, acid phosphatase, in cells of the peritoneal exudate. These shifts were not associated with multiplication of the virus in cells. Swelling of lysosomes during interferon production, formation of Homori-positive vacuoles in macrophages, and release of these vacuoles into the culture field suggest that the lysosome apparatus of the cells takes part in the production and release of interferon.

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1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DISORDERS OF INTRAUTERINE DEVELOPMENT OF MICE UPON INOCULATION OF
PREGNANT FEMALES WITH COXSACKIE VIRUSES -U-
AUTHOR-(03)-SOLOVYEV, V.D., KHESIN, YA.YE., GUTMAN, N.R.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 1, PP 60-67

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COXSACKIE B VIRUS, EMBRYOLOGY, MOUSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1943

STEP NO--UR/0402/70/000/001/0060/0067

CIRC ACCESSION NO--AP0103670

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103670

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREGNANT MICE WERE INOCULATED INTRAVENOUSLY WITH LARGE DOSES OF HIGHLY PATHOGENIC STRAINS OF COXSACKIE B3 AND A6 VIRUSES ON THE FIRST 4 TO 10 DAYS OF PREGNANCY. PATHOLOGICAL DEVELOPMENT OF EMBRYOS WAS OBSERVED IN 20 TO 25PERCENT OF THE FEMALES. IN INFECTION WITH COXSACKIE B3 VIRUS ON THE 4 TO 7TH DAYS OF PREGNANCY, THE VIRUS FREQUENTLY AFFECTED THE PLACENTA BUT IN A NUMBER OF CASES INVOLVEMENT OF TISSUES OF THE EMBRYO WAS OBSERVED WITH THE PLACENTA EXTERNALLY APPEARING INTACT. INOCULATION OF THE 7 TO 10TH DAYS OF PREGNANCY WAS NOT ACCOMPANIED BY ANY CHANGES IN THE EMBRYO TISSUE; THE INFECTION WAS MANIFESTED POSTNATALLY. THE VIRUS WAS ISOLATED ONLY FROM 2 OUT OF 60 EMBRYOS EXAMINED. AFTER INOCULATION WITH COXSACKIE A6 VIRUS EARLY IN PREGNANCY NO INVOLVEMENT OF THE EMBRYO WITH INTACT PLACENTA WAS OBSERVED. INOCULATION ON THE 7 TO 10TH DAYS OF PREGNANCY FREQUENTLY RESULTED IN DEVELOPMENT OF CHARACTERISTIC CHANGES IN THE DEVELOPING SKELETAL MUSCLES. IN 13.1PERCENT OF FEMALES MISCARRIAGES AND STILLBIRTHS WERE OBSERVED. IN INFECTIONS WITH BOTH VIRUSES THE TIME OF APPEARANCE OF CHANGES IN EMBRYOS COINCIDED WITH THE TIME OF MAXIMUM ACCUMULATION OF THE VIRUS IN THE BLOOD OF MOTHERS. NEWBORN MICE WERE FOUND INFECTED IN 100PERCENT OF CASES AND DIED ON THE 2 TO 5TH DAYS OF LIFE. A CORRELATION WAS FOUND BETWEEN THE TIME OF APPEARANCE OF ANTIBODY IN THE BLOOD OF MOTHERS, THE PRESENCE OF THE VIRUS IN EMBRYO TISSUES AND THE DEGREE OF AFFECTION OF EMBRYO TISSUES AND FETUSES.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CYTOCHEMICAL PECULIARITIES OF RIBONUCLEOPROTEIDS AND OF THE
DESOZYRIBONUCLEOPROTEID COMPLEX IN THE NUCLEOLES OF RETICULAR CELL
AUTHOR--(03)--SHABADASH, A.L., KHESIN, YA.YE., KHEMCHYAN, L.B.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL' NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR
4, PP 107-110
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CYTOLOGY, DNA, LEUKEMIA, PRIMATE, HISTOCHEMISTRY, BIOLOGIC
STAIN, RNA, THYMUS GLAND, METHYLENE BLUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1653

STEP NO--UR/0219/70/069/004/0107/0110

CIRC ACCESSION NO--AP0106399

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106399

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN STABLE LINES OF RETICULAR CELLS (APE'S TONSILS AND THE BLOOD OF MAN WITH MONOCYTIC LEUKEMIA) HISTOCHEMICAL INVESTIGATIONS DISCLOSED FIVE FRACTIONS OF THE RIBNUCLEOPROTEID NUCLEOLAR STRUCTURES, ANALOGOUS TO THOSE DESCRIBED EARLIER BY SHABADASH ET AL. IN NERVE CELLS. WHEN STAINED WITH METHYL BLUE THE ISOELECTRIC POINTS OF THE FRACTION I CORRESPOND TO PH-2.5, II, TO PH 2.7-3.2; III AND IV, TO 3.5-3.8; V, TO PH 4.0-4.5. CHRYSOMALINE (THE INHIBITOR OF THE DNA DEPENDENT RNA SYNTHESIS) OR ETHIONINE (THE INHIBITOR OF THE PROTEIN SYNTHESIS) ARE CAUSATIVE IN MAKING THE FIRST THREE FRACTIONS DISAPPEAR. ETHIONINE PRODUCES THE GREATEST IMPACT ON THE IV FRACTION, THIS POINTING TO A HIGH PROPORTION OF PROTEINS CONTAINED IN IT. RELATIVELY RESISTANT IS THE V FRACTION, THE COMPLEX OF RNA WITH DNA OF THE HETEROCHROMATIN TYPE, THIS CORRELATING WITH RECENT BIOCHEMICAL INVESTIGATIONS OF THE THYMUS CELL NUCLEI. THE DESCRIBED NUCLEOLAR COMPONENTS ARE, EVIDENTLY, TYPICAL FOR DIVERSE CELLS AND CAN BE ELIMINATED EXPERIMENTALLY THROUGH AN ORIENTED ACTION.

UNCLASSIFIED

USSR

UDC 616.155.3-008.13:576.858.13.095.993

BOCHAROV, A. F., MOYSIADI, S. A., ANCHENKOVA, A. M., VORONINA, F. V., and KHESIN, YA. YE., Chair of Virology, Central Institute of Advanced Training of Physicians, Ministry of Health USSR, and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Effect of Immunological Reactivity of Rabbit Leukocytes and Macrophages on Interferon Production in the Presence of Herpes Virus"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 71, pp 725-731

Abstract: Upon contact with herpes virus in vitro, interferon is produced in small amounts by leukocytes obtained from the peripheral blood of control rabbits, in larger amounts of leukocytes and macrophages obtained from the peritoneal exudate of control rabbits, and in the largest amounts and at the fastest rate by peritoneal leukocytes and macrophages of previously immunized rabbits. After vaccination, white blood cells mobilized in the peritoneal exudate have a faster metabolic rate, including a higher activity of oxidative and hydrolytic enzymes and a greater RNA concentration, than in the control state, and they also absorb the antigen more readily. Evidence indicates that these factors are responsible for the augmented production of interferon.

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USSR

UDC 621.791.052:621.787:620.169.1;
669.295:620.178.311.868

LUK'YANOV, V. F., OLIFER, V. V., LYUDMIRSKIY, Yu. G., ~~KHESTN, Yu. D.~~,
BODUNOVA, M. B., Rostov-na-Donu Institute of Agricultural Machine Building

"Influence of Surface Hardening on Low-Cycle Durability of Type B120VCA
Titanium Alloy in a Corrosive Medium"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 72, pp 26-27.

Abstract: A method of testing welded joints in biaxial bending is developed, allowing the influence of a corrosive medium on low-cycle fatigue of joints to be determined. Tests are performed in a 3% solution of NaCl under loading conditions characteristic for sheet structures. In the test installation developed, the specimen is suspended over a cavity and deformed by the pressure of air pumped into the sealed cavity, with the top of the specimen covered by the salt solution. The tests indicate that plastic deformation of a welded joint by rolling of the joint between narrow rolls can significantly increase durability under these conditions.

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UDC 614.777.1/615.277.4.547.53

USSR

IL'NITSKIY, A. P., YERSHOVA, K. P., KHESINA, A. YA., ROZHKOVA, L. G.,
KLURKOV, V. G., and KOROLEV, A. A., Institute of Experimental and Clinical
Oncology, Academy of Medical Sciences USSR, Institute of General and Communal
Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, and First
Moscow Medical Institute imeni I. M. Sechenov

"Stability of Carcinogens in Water and Effectiveness of Decontamination
Methods"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Abstract: Polycyclic aromatic hydrocarbons, especially benzpyrene, can re-
main active in water a long time and spread to considerable distances from
the source of contamination. The wide distribution of these carcinogens
in water is promoted by the presence of certain substances that help them to
dissolve, e.g., surfactants which at concentrations of 10 to 50 mg/l can
increase the solubility of benzpyrene as much as 10-fold. Certain purifi-
cation methods (ultraviolet irradiation, chlorination, ozonization, gamma
irradiation) decrease the concentration of the carcinogens in varying degrees.
Ozonization is the most effective, gamma irradiation the least effective.

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USSR

IL'NITSKIY, A. P., et al., Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Experiments showed that bacteriological indicators (e.g., the coli titer) following the use of ultraviolet or gamma rays reveal little about the presence or absence of carcinogenic hydrocarbons. Sixty minutes' boiling of water containing benzopyrene at a concentration of 0.002 to 0.002 μ g/L neutralized most of the compound.

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1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--METABOLISM OF A SERIES OF POLYCYCLIC HYDROCARBONS IN A CULTURE OF
NORMAL EMBRYONAL FIBROBLASTS -U-
AUTHOR--(02)-BELITSKIY, G.A., KHESINA, A.YA.
COUNTRY OF INFO--USSR
SOURCE--VOP. ONKOL. 1970, 16(4), 113-17
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--METABOLISM, HYDROCARBON, MOUSE, EMBRYOLOGY, CULTURE MEDIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3009/0147 STEP NO--UR/0506/70/016/004/0113/0117
CIRC ACCESSION NO--AP0139012
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0139012
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE INTENSITY OF METABOLISM OF POLYCYCLIC HYDROCARBONS BY NORMAL MOUSE EMBRYONAL FIBROBLASTS IN VITRO DECREASED IN THE FOLLOWING SEQUENCE: BENZ(ALPHA)PYRENE AND BENZ(ALPHA)ANTHRACENE FOLLOWED BY DIBENZ(AH)ANTHRACENE AND BENZO(GHI)PERYLENE, AND LESS SIGNIFICANTLY BY 7,12-DIMETHYLBENZ(ALPHA)ANTHRACENE, PYRENE, AND PERYLENE. THIS SEQUENCE DID NOT CORRELATE WITH THEIR SOLY. IN CELLULAR LIPIDS, THEIR CYTOTOXICITY, OR THEIR CARCINOGENIC ACTIVITY, BUT SEEMED TO DEPEND UPON THEIR ABILITY TO INDUCE MULTIFUNCTIONAL OXIDASES IN THE CELLS.

FACILITY: INST. EXPTL. CLIN. ONCOL., MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--A HEMAGGLUTINATING ADENO ASSOCIATED SIMIAN VIRUS -U-

AUTHOR--(05)--KRAVCHENKO, A.T., OMELCHENKO, T.N., DODONOVA, N.N.,
KHETAGUROVA, A.K., ALTSHTEYN, A.D.
COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIROLOGII, 1970, NR 3, PP 301-308
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACENOVIRUS, HEMAGGLUTINATION, ANTIBODY, MONKEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1469

STEP NO--UR/0402/70/000/003/0301/0308

CIRC ACCESSION NO--AP0125097

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125097

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A HEMAGGLUTINATING ADENO ASSOCIATED VIRUS (AAV) WAS RECOVERED FROM A STRAIN OF SIMIAN ADENOVIRUS SV15. ITS MORPHOLOGY AND CAPACITY TO BE ACTIVATED BY DIFFERENT SIMIAN ADENOVIRUSES WAS STUDIED. HIGHLY ONCOGENIC SIMIAN ADENOVIRUSES SV20 AND SA7(C8) DID NOT ACTIVATE THE STRAINS OF AAV UNDER STUDY, UNLIKE 14 OTHER SEROTYPES OF SIMIAN ADENOVIRUSES. A METHOD FOR TITRATION OF THE INFECTIOUS ACTIVITY OF AAV WAS DEVELOPED. FORMATION OF AAV HEMAGGLUTININS WAS SHOWN TO BE ONLY PARTIALLY INHIBITED BY 5, IODODEOXYURIDINE AND ALMOST COMPLETELY INHIBITED BY 5, FLUORODEOXYURIDINE. PROPERTIES OF HEMAGGLUTININS AND CONDITIONS FOR PERFORMING HA TEST AND HI TEST WITH AAV WERE STUDIED, AS WELL AS PROPERTIES OF HEMAGGLUTINATION INHIBITORS IN MONKEY SERA. SEVENTY FOUR PER CENT OF GREEN MONKEYS IMPORTED TO MOSCOW ANIMAL HOUSES WERE SHOWN TO HAVE ANTIBODY FOR THE HEMAGGLUTINATING AAV STRAIN. NO ANTIBODY FOR AAV WAS FOUND IN HUMAN SERA. FACILITY: GOSUDARSTVENNYY KONTROLYNYY INSTITUT MEDITSINSKIKH. FACILITY: BIOLOGICHESKIKH PREPARATOV IMENI L. A. TARASEVICH, INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IMENI N. F. GMALEI, MOSKVA.

UNCLASSIFIED

USSR

UDC: 621.385.002.54(088.8)

RYAZANOV, V. G., RCMANYUK, R. F., KHEYFETS, A. D., IKONNIKOV, Yu. N.

"A Wobbulator for Vacuum Resonators in Discriminators"

USSR Author's Certificate No 256093, filed 10 Apr 67, published 3 Apr 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D100 P)

Translation: This Author's Certificate introduces a wobbulator for vacuum resonators in discriminators. The device contains a rotating plate located in the face end of the resonator. To improve reliability and simplify operation, the rotating plate is separated from the vacuum resonator by a hermetically sealed cap, and is equipped with rotators which operate mechanically, are transparent to radio waves, and are connected to the resonator. Résumé.

USSR

UDC 616.9-085.371-039.71

BELYAKOV, V. D., and KHEYFETS, L. B.

"Certain Theoretical and Practical Aspects of Specific Prophylaxis Against Infectious Diseases"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunologii, No 6, 1973,
pp 148-153

Abstract: During the past 10 years much has been accomplished in the fields of immunoprophylaxis and immunotherapy, especially in the USSR. Among the conclusions of the Commission on Immunoprophylaxis of the Presidium of the Academy of Medical Sciences of the USSR is that the schedule of immunization against smallpox may be modified so that primary immunization takes place during the 1st to 2d year of life (rather than the 12th to 18th month, as now practiced), and in exceptional cases may be postponed to the 3d year. Immunization of children older than 3 years should be accompanied by the administration of specific immune gamma globulin. It has also been recommended that biphasic immunization be evaluated employing an inactivated vaccine to minimize complications. The need for smallpox reimmunization after the 15th years of life has also been questioned. Studies need also to be conducted to determine whether the time of immunization with the DPT

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USSR

BELYAKOV, V. D., and KHEYFETS, L. B., Zhurnal Mikrobiologii Epidemiologii i Immunologii, No 6, 1973, pp 148-153

vaccine should be moved up to the 3d month of life from the 5th to 6th month. It has also been suggested that the pertussis component of the DPT vaccine be increased and diphtheria and tetanus toxoids be decreased. Other suggestions are that a pertussis vaccine be administered separately to enhance the immune response against it. At the present time no changes are planned in the vaccination schedule for tuberculosis. All indications are that the Soviet BCG preparations are as effective as the best foreign vaccines. Currently, the first intracutaneous vaccination is administered on the 5th to 7th day of life to more than 95% of the neonates. Revaccinations are conducted at ages 6-7, 12, and 17 years. Immunity seems to be maintained for 5-7 years after the last injection. Live polio vaccine is administered orally three times during the 1st, 2d, and 3d years of life, and once when the pupils enter the first and the ninth classes. During the last few years a measles vaccine has been introduced which is first administered during the first 10 to 12 months of life. The vaccine has not yet been standardized and occasionally elicits severe side effects, but it is highly effective. However, the duration of immunity has not yet been definitely established.

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USSR

BELYAKOV, V. D., and KHEYFETS, L. B., Zhurnal Mikrobiologii Epidemiologii i Immunologii, No 6, 1973, pp 148-153

Detailed studies are also being conducted on the routes of administration and effectiveness of influenza A2 and B vaccines, and of a mumps vaccine.

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USSR

UDC 615.371:576.851.49).03:616.34-022-084).036.8

KREYFETS, L. B., LEVINA, L. A., BENTSIANOVA, T. G., and SALMIN, L. V., Moscow
Institute of Vaccines and Sera imeni Mechnikov

"Protective Activity of Various Antigenic Complexes of Typhoid Vaccines and Prospects on Improving the Chemical Vaccines"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1970, pp 89-98

Abstract: New possibilities for studying the role of individual antigens in the formation of postvaccinal immunity were discovered in connection with the existence of vaccine samples with a known efficacy for man. Experimental study of these vaccines failed to demonstrate any correlation between the quantitative content of Vi-antigen and the protective capacity for man. However, qualitative differences in O-antigen were revealed in vaccines with a different efficacy for man, which can be detected by immunoelectrophoresis and metachromatic staining. A direct correlation was found between the efficacy of the vaccine and the quantitative content of H-antigen. This is one of the indirect indications of the presence of typhoid protective labile antigen (LP-antigen). The content and activity of LP-antigen in the vaccine is determined by the capacity of the preparation to stimulate the formation of H-antibodies during immunization of human beings and experimental animals. In production and improvement of the chemical vaccines, sufficiently accurate methods should be employed to preserve all the components of O-, Vi-, H-

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KHEYFETS, L. B., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 5, 1970, pp 89-93

and LP-antigens contained in the initial microbial suspensions in a natural condition (as far as possible).

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1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--COMPARATIVE ASSESSMENT OF IMMUNOLOGICAL EFFICACY OF AKDC VACCINES
WITH VARIOUS QUANTITATIVE CONTENT OF COMPONENTS IN PRIMARY IMMUNIZATION
AUTHOR--(US)--KHEYFETS, L.B., SALMIN, L.V., SEGAL, L.S., BRUSINA, L.I.,
GURDZIANTS, E.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR
4, PP 134-140
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNIZATION, VACCINE, TETANUS TOXOID, DIPHTHERIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY KEEL/FAME--1990/1485

STEP NO--UR/0016/70/000/004/0134/0140

CIRC ACCESSION NO--AP0109545

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109545

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CARRIED OUT A STRICTLY CONTROLLED FIELD TRIAL ON COMPARISON OF THREE VARIETIES OF AKDC VACCINE, DIFFERING BY CONTENT OF THE VACCINAL DOSE OF DIPHTHERIA, TETANUS AND PERTUSSIS COMPONENTS. BLOOD SERA OBTAINED BEFORE THE IMMUNIZATION AND AFTER EACH OF THE THREE INJECTIONS OF THE PREPARATION WERE EXAMINED; THE LAST SAMPLE WAS TAKEN IN 1.5-2.5 MONTHS AFTER THE THIRD INJECTION. AS DEMONSTRATED, REDUCED DOSES OF TETANUS TOXOID (EITHER ITS DIMINISHED CONTENT IN THE VACCINE FROM 5 TO 2.5 BU, OR ITS INCLUSION INTO THE ASSOCIATED PREPARATION ONLY IN 2 INJECTIONS, FOR EXAMPLE IN THE 2ND AND 3RD, THE THIRD INJECTION CONTAINING NO TOXOID) WERE JUSTIFIED. ANALOGOUS CHANGES COULD ALSO BE MADE IN RESPECT TO DIPHTHERIA TOXOID, BUT IN THE LATTER CASE A STUDY OF THE TITRES AT THE MORE REMOTE PERIODS AFTER THE IMMUNIZATION ARE REQUIRED. IT IS OF EXPEDIENCE TO INCREASE THE CONTENT OF PERTUSSIS COMPONENT IN AKDC VACCINE FROM 10 TO 5 MILLIARD MICROBIAL CELLS PER DOSE.

UNCLASSIFIED

172 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PROTECTIVE ACTIVITY OF VARIOUS ANTIGENIC COMPLEXES OF TYPHOID
VACCINES AND PROSPECTS OF IMPROVEMENT OF CHEMICAL VACCINES -U-
AUTHOR-(04)-KHEYFETS, L.B., LEVINA, L.A., BENTSANOVA, T.G., SALMIN, L.V.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 89-96
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TYPHOID FEVER VACCINE, VI ANTIGEN, H ANTIGEN, O ANTIGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0131

STEP NO--UR/0016/70/000/005/0089/0096

CIRC ACCESSION NO--AP0114527

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW POSSIBILITIES FOR STUDYING THE ROLE OF INDIVIDUAL ANTIGENS IN THE FORMATION OF POST VACCINAL IMMUNITY WERE OPENED IN ASSOCIATION WITH THE PRESENCE OF VACCINE SAMPLES WITH KNOWN EFFICACY FOR MAN. EXPERIMENTAL STUDY OF THESE VACCINES FAILED TO DEMONSTRATE ANY CORRELATION BETWEEN THE QUANTITATIVE CONTENT OF VI ANTIGEN AND THEIR PROTECTIVE CAPACITY FOR MAN. ALONG WITH THIS THERE WERE REVEALED QUALITATIVE DIFFERENCES OF THE O ANTIGEN (DETECTABLE WITH THE AID OF IMMUNOELECTROPHORESIS AND BY METACHROMATIC STAINING) IN THE VACCINES WITH DIFFERENT EFFICACY FOR MAN. THERE WAS FOUND A DIRECT CORRELATION BETWEEN THE EFFICACY OF THE VACCINES AND THE QUANTITATIVE CONTENT OF H ANTIGEN IN THEM; THIS IS ONE OF THE INDIRECT INDICATIONS OF THE EXISTENCE OF TYPHOID PROTECTIVE LABILE ANTIGEN (LP ANTIGEN). THE CONTENT AND THE ACTIVITY OF LP ANTIGEN IN THE VACCINE IS CONTROLLED BY THE CAPACITY OF THE PREPARATION TO STIMULATE FORMATION OF H ANTIBODIES IN IMMUNIZATION OF HUMAN BEINGS AND EXPERIMENTAL ANIMALS. IN ELABORATION AND IMPROVEMENT OF CHEMICAL VACCINES, SUFFICIENTLY DELICATE METHODS SHOULD BE EMPLOYED TO PRESERVE ALL THE COMPONENTS OF O, VI, H AND LP ANTIGENS, CONTAINED IN THE INITIAL MICROBIAL SUSPENSIONS, IN AS FAR AS POSSIBLE NATURAL CONDITION. FACILITY: MOSCOW INSTITUT VAKTSIN I SYVOROTOK IM. MECHNIKOVA.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126111

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. A COMPARISON WAS MADE BETWEEN THE INTENSITY OF IMMUNIZATION REACTIONS IN RESPONSE TO TYPHOID VACCINES AND IMMUNOLOGICAL RESPONSE OF THE VACCINATED PERSON IN 315 CHILDREN, AGED FROM 7 TO 13 YEARS. CORRELATION ANALYSIS WAS APPLIED TO THESE STUDIES. THE RELATIONSHIP OF THE HEIGHT OF THE TITRES TO THE INTENSITY OF THE CLINICAL REACTION IN RESPONSE TO THE VACCINATION WAS THE MOST PRONOUNCED IN H AGGLUTININS OF 19S AND 7S CLASSES (R EQUALS 0.66, M SUBR EQUALS 0.03); THE LEAST ASSOCIATION PROVED TO EXIST BETWEEN THE INTENSITY OF VACCINAL REACTIONS AND THE VI ANTIBODY TITRES (R EQUALS 0.23, M SUBR EQUALS 0.05). CORRELATION BETWEEN THE HEIGHT OF THE ANTIBODY TITRES AND THE INTENSITY OF VACCINAL REACTIONS WAS THE MOST DISTINCT IN THE VACCINATED PERSONS WITH LOW AND MODERATELY PRONOUNCED REACTIONS. FACILITY: MOSKOVSKIY INSTITUT VAKTSIN I SYVOROZOK IM. MECHNIKOVA.

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